

Abstract of the Disclosure

A METHOD AND SYSTEM OF DETERMINING A LIFE OF A
TURBOCHARGER

In order to accurately determine a life of a turbocharger, the specific use, herein referred to as a “duty cycle” of the turbocharger, should be monitored. However, in order to directly monitor the duty cycle of the turbocharger, there are additional costs of assembly and installation of a turbocharger rotational speed sensor. The present invention determines a life of a turbocharger by indirectly monitoring the duty cycle of the turbocharger through sensors that generally serve a pre-existing purpose within a vehicle or machine. A compressor inlet pressure sensor and compressor outlet pressure sensor are in communication with an electronic control module that includes a life determining algorithm. The life determining algorithm determines the life of the turbocharger based on a relationship between a sensed compressor inlet pressure and a sensed compressor outlet pressure. By monitoring the relationship between the sensed compressor inlet pressure and the sensed compressor outlet temperature, the fatigue and the creep of at least one component of the turbocharger is monitored.